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UNITED STATES DEPARTMENT OF AGRICULTURE

DEPARTMENT BULLETIN No. 1199

Washington, D. C. August, 1924

LIST OF BULLETINS OF THE AGRICULTURAL EXPERIMENT STATIONS FOR THE CALENDAR YEARS 1921 AND 1922

SUPPLEMENT 1

By CATHERINE E. PENNINGTON, Library Assistant, Office of Experiment Stations

WASHINGTON
GOVERNMENT PRINTING OFFICE
1924

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UNITED STATES DEPARTMENT OF AGRICULTURE

DEPARTMENT BULLETIN No. 1199
SUPPLEMENT 1

Washington, D. C. ▼ August, 1924

BULLETINS OF THE EXPERIMENT STATIONS, 1921 AND 1922

By CATHERINE E. PENNINGTON, *Library Assistant, Office of Experiment Stations*

Alabama Agricultural Experiment Station, Auburn.

BULLETINS.

215. Comparison of peanut meal, cottonseed meal, velvet bean meal, ammonium sulphate, and nitrate of soda, as fertilizer for corn and cotton. E. F. Cauthen. Feb., 1921.
216. The Mexican bean beetle, a new pest in Alabama. W. E. Hinds. Mar., 1921.
217. Use of wooden constructed fire heated hot beds for production of sweet potato plants. C. L. Isbell and W. D. Kimbrough. Mar., 1922.
218. Poisonous action of red buckeye on horses, mules, cattle, hogs, and fish. C. A. Cary. June, 1922.

Arizona Agricultural Experiment Station, Tucson.

BULLETINS.

93. Feeding cotton seed and cotton seed products to range steers. E. B. Stanley. Aug., 1921.
94. The olive in Arizona. F. J. Crider. Jan., 1922.
95. The Colorado River and Arizona's interest in its development. G. E. P. Smith. Feb. 25, 1922.

TECHNICAL BULLETINS.

1. Life history of the kangaroo rat (*Dipodomys spectabilis spectabilis* Merriam). C. T. Vorhies and W. P. Taylor. Sept. 13, 1922. Published as U. S. Dept. Agr. Bul. 1091.
2. Sunburn and aphid injury of soybeans and cowpeas. Frederick Gibson. Sept. 15, 1922.

Arkansas Agricultural Experiment Station, Fayetteville.

BULLETINS.

173. Arkansas cotton diseases. J. A. Elliott. Jan., 1921.
174. Commercial grape growing. J. R. Cooper. Feb., 1921.
175. (Technical.) Septoria glume blotch of wheat. H. R. Rosen. May, 1921.
176. Vitamins and the daily diet. J. W. Read, Stella Palmer and Lorraine Steer. Nov., 1921.
177. Spraying for San José scale. W. J. Baerg. Nov., 1921.
178. (Technical.) A new ascochyta disease of cotton. J. A. Elliott. Apr., 1922.
179. (Technical.) Eastern strawberry louse. W. J. Baerg. May, 1922.
180. Results of fertilizer experiments 1919–1920–1921. Martin Nelson and W. H. Sachs. May, 1922.
181. Farm helps from experiments: Annual report of the director, 1921–1922. Bradford Knapp. June 30, 1922.
182. Facts about college of agriculture, University of Arkansas. Dec., 1922.

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California Agricultural Experiment Station, Berkeley.

BULLETINS.

328. Prune growing in California. A. H. Hendrickson. June, 1921.
329. A white fir volume table. Donald Bruce. Aug., 1921.
330. Dehydration of fruits, a progress report. W. V. Cruess and A. W. Christie. Sept., 1921.
331. Phylloxera-resistant stocks. F. T. Bioletti, F. C. H. Flossfeder and A. E. Way. Oct., 1921.
332. Walnut culture in California. L. D. Batchelor. June, 1921.
333. Some factors affecting the quality of ripe olives sterilized at high temperatures. W. V. Cruess. Oct., 1921.
334. Preliminary volume tables for second-growth redwood. Donald Bruce. Oct., 1921.
335. Cocoanut meal as a feed for dairy cows and other livestock. F. W. Woll. Nov., 1921.
336. The preparation of nicotine dust as an insecticide. R. E. Smith. Nov., 1921.
337. Some factors of dehydrated efficiency. W. V. Cruess and A. W. Christie. Nov., 1921.
338. Selection and treatment of waters for spraying purposes with especial reference to Santa Clara Valley. E. R. deOng. Dec., 1921.
339. The relative cost of making logs from small and large timber. Donald Bruce. Jan., 1922.
340. Control of the pocket gopher in California. Joseph Dixon. Feb., 1922. Revision of 281.
341. Studies on the irrigation of citrus groves. E. E. Thomas. Mar., 1922.
342. Hog feeding experiments. J. I. Thompson and E. C. Voorhies. Apr., 1922.
343. Cheese pests and their control. E. R. deOng and C. L. Roadhouse. May, 1922.
344. Cold storage as an aid to the marketing of plums; a progress report. E. L. Overholser. June, 1922.
345. Fertilizer experiments with citrus trees. R. S. Vaile. June, 1922.
346. Almond pollination. W. P. Tufts and G. L. Philp. July, 1922.
347. The control of red spiders in deciduous orchards. E. R. deOng. Aug., 1922.
348. Pruning young olive trees. F. T. Bioletti. Sept., 1922.
349. A study of sidedraft and tractor hitches. A. H. Hoffman. Oct., 1922.
350. Agriculture in cut-over redwood lands. W. T. Clarke. Oct., 1922.
351. California state dairy cow competition, 1920–22. F. W. Woll. Nov., 1922.
352. Further experiments in plum pollination. A. H. Hendrickson. Dec., 1922.

Colorado Agricultural Experiment Station, Fort Collins.

BULLETINS.

265. The Venturi flume. R. L. Parshall and Carl Rohwer. Feb., 1921.
266. Beet by-products for fattening lambs. E. J. Maynard. Apr., 1921.
267. Titanium, barium, strontium and lithium in certain plants. W. P. Headden. July, 1921.
268. Codling moth control for certain sections of Colorado. G. M. List and J. H. Newton. July, 1921.
269. A contribution to our knowledge of the Syrphidae of Colorado: Part I, Description, life histories and food habits: Part II, key to genera and species of Syrphidae with citations and habitat; Part III, catalogue of known Colorado Syrphidae. C. R. Jones. Apr., 1922.
270. Sheep losses in Colorado feed lots: Study no. 1, Feeding experiments. G. H. Glover and I. E. Newsom. Sept., 1921.
271. The Mexican bean-beetle (*Epilachna corrrupta* Muls.). G. M. List. Aug., 1921.
272. Orchard survey of the northeastern district of Colorado. E. P. Sandsten and C. M. Tompkins. Apr., 1922.
273. Orchard survey of the Arkansas Valley district. E. P. Sandsten and C. M. Tompkins. Apr., 1922.
274. Orchard survey of the southwestern district of Colorado. E. P. Sandsten and C. M. Tompkins. June, 1922.
275. Orchard survey of the western district of Colorado. E. P. Sandsten and C. M. Tompkins. June, 1922.
276. The home vegetable garden. R. A. McGinty. Feb., 1922. A revision of 241.
277. Fixation of nitrogen in Colorado soils: Occurrence of nitrates on rocks. W. P. Headden. May, 1922.

278. Degeneration in Colorado potatoes. E. P. Sandsten and C. M. Tompkins. Nov., 1922.
279. Return of seepage water to the lower South Platte River in Colorado. R. L. Parshall. Dec., 1922.

Connecticut Agricultural Experiment Station, New Haven.

BULLETINS.

224. Spray calendar [1921]. W. E. Britton and G. P. Clinton. [1921].
225. (Entomological series, no. 28.) A study of the bulb mite (*Rhizoglyphus hyacinthi* Banks). Philip Garman. Jan., 1921.
226. Twentieth report of the state entomologist of Connecticut for the year 1920. W. E. Britton. 1921.
227. Twenty-fifth report on food products and thirteenth report on drug products [1920]. E. M. Bailey. Feb., 1921.
228. Connecticut round tip tobacco, a new type of wrapper leaf. D. F. Jones. Mar., 1921.
229. Report on commercial feeding stuffs, 1920. E. M. Bailey. Mar., 1921.
230. (Entomological series, no. 29.) The grass-feeding frog-hopper or spittle-bug (*Philaenus lineatus* Linnaeus, order Hemiptera, family Cercopidae). Philip Garman. June, 1921.
231. Report of the Tree protection examining board. W. E. Britton.—Miscellaneous notes. E. H. Jenkins. Sept., 1921.
232. Report of the director for the year ending October 31, 1921. E. H. Jenkins. Oct., 1921.
233. Fertilizer report for 1921, with appended analyses of insecticides and fungicides. E. H. Jenkins and E. M. Bailey. Nov., 1921.
234. Twenty-first report of the state entomologist of Connecticut for the year 1921. W. E. Britton. 1922.
235. Experiments in dusting versus spraying on apples and peaches in Connecticut in 1921. W. E. Britton, M. P. Zappe, and E. M. Stoddard. Feb., 1922.
236. Twenty-sixth report on food products and fourteenth report on drug products [1921]. E. M. Bailey. Jan., 1922.
237. (Forestry publication no. 13.) Control of white pine blister rust in Connecticut, 1909–1921. W. O. Filley and H. W. Hicock. Feb., 1922.
238. Report on commercial feeding stuffs, 1921. E. M. Bailey. Feb., 1922.
239. Wildfire of tobacco in Connecticut. G. P. Clinton and F. A. McCormick. May, 1922.
240. Twenty-seventh report on food products and fifteenth report on drug products: Part I, Commercial vitamine preparations: The potency of some commercial vitamine preparations as compared with that of dry brewers' yeast. E. M. Bailey, H. C. Cannon and H. J. Fisher. Aug., 1922.
241. Fertilizer report for 1922. E. H. Jenkins and E. M. Bailey. Nov., 1922.
242. Report on commercial insecticides and fungicides, 1922: I, The examination of some materials sold as insecticides and fungicides. E. M. Bailey and R. E. Andrew.—II, Recent developments in the use of insecticides. W. E. Britton. Nov., 1922.
243. Report of the director for the year ending October 31, 1922. E. H. Jenkins. Nov., 1922.

Connecticut Agricultural Experiment Station, Storrs.

BULLETINS.

107. Seed potatoes for Connecticut. W. L. Slate, jr., and B. A. Brown. Nov., 1921.
108. Infectious abortion in cattle. Third report. L. F. Rettger, G. C. White, and LeR. M. Chapman. Nov., 1921.
109. The relationship between the weight and the hatching quality of eggs. L. C. Dunn. Mar., 1922.
110. The rose chafer as a cause of death of chickens. G. H. Lamson, jr. Oct., 1922.

Delaware Agricultural Experiment Station, Newark.

BULLETINS.

127. Sweet potato storage in Delaware. T. F. Manns. Jan. 1, 1920 [i. e., 1921 ?].
128. Corn root rot diseases. T. F. Manns and J. F. Adams. June 20, 1921.
129. Annual report of the director for the fiscal year ending June 30, 1921. C. A. McCue. Nov., 1921.

130. Management of meadows and pastures. G. L. Schuster. Mar., 1922.
131. (Technical no. 1.) The effect of hydrogen ion concentration upon the growth of seedlings. L. W. Tarr and S. C. Noble. June, 1922.
132. Cabbage wilt and stem rot in Delaware. T. F. Manns. June, 1922.
133. Annual report of the director for the fiscal year ending June 30, 1922. C. A. McCue. Nov., 1922.

Florida Agricultural Experiment Station, Gainesville.

BULLETINS.

159. Control of root-knot, II. J. R. Watson. Apr., 1921.
160. Soft pork studies, II. J. M. Scott. May, 1921.
161. Avocado diseases. H. E. Stevens. May, 1922.
162. The flower thrips. J. R. Watson. June, 1922.
163. Bunch velvet beans to control root-knot. J. R. Watson. June, 1922.
164. The bean leaf-hopper and hopperburn with methods of control. A. H. Beyer. June, 1922.
165. A preliminary report upon an improved method of controlling the boll weevil. G. D. Smith. Oct., 1922.
166. Tobacco diseases in Gadsden County in 1922, with suggestions for their prevention and control. W. B. Tisdale. Dec., 1922.

Georgia Agricultural Experiment Station, Experiment.

BULLETINS.

139. Peach disease control. J. A. McClintock. Dec., 1921.
140. Pimento and bell peppers. H. P. Stuckey and J. A. McClintock. Dec., 1921.

Guam Agricultural Experiment Station, Island of Guam.

BULLETINS.

1. Para and paspalum; two introduced grasses of Guam. Glen Briggs. Dec., 1921.
2. Vegetable growing in Guam. Glen Briggs. June, 1922.
3. The sorghums in Guam. Glen Briggs. Nov. 4, 1922.
4. Leguminous crops for Guam. Glen Briggs. Aug., 1922.

Hawaii Agricultural Experiment Station, Honolulu.

BULLETIN.

46. The pigeon pea (*Cajanus indicus*), its culture and utilization in Hawaii. F. G. Krauss. Dec. 16, 1921.

Idaho Agricultural Experiment Station, Moscow.

BULLETINS.

122. Work and progress of the agricultural experiment station for the year ended December 31, 1920. E. J. Iddings. Jan., 1921.
123. Preliminary report on farm organization in Twin Falls and Latah Counties. Byron Hunter. Feb., 1921.
124. The codling moth in the Payette Valley. L. E. Longley. June, 1921.
125. Field peas for pork production. R. E. Gongwer. Aug., 1921.
126. Tuberculosis of poultry. C. H. Werkman and W. M. Gibbs. Nov., 1921.
127. The measurement of water. A handbook for ditch riders and water users. W. G. Steward. Jan., 1922.
128. The farm septic tank. J. C. Wooley and W. M. Gibbs. Jan., 1922.
129. Work and progress of the agricultural experiment station for the year ended December 31, 1921. E. J. Iddings. Jan., 1922.
130. The eelworm disease of red clover. R. H. Smith. Mar., 1922.

RESEARCH BULLETINS.

1. The effect of available nitrogen on the protein content and yield of wheat. R. E. Neidig and R. S. Snyder. Feb., 1922.
2. Farm costs and relative profitableness of seven crops, Twin Falls County, Idaho, 1919 and 1920. Byron Hunter and S. B. Nuckols. Mar., 1922.

Illinois Agricultural Experiment Station, Urbana.

BULLETINS.

231. The horse and the tractor, an economic study of their use on farms in central Illinois. W. F. Handschin, J. B. Andrews, and Emil Rauchenstein. Feb., 1921.
232. I, Potash shales of Illinois. S. W. Parr and M. M. Austin.—II, Geology, distribution, and occurrence in Union County. Frank Krey.—III, Finely-ground shale as a source of potassium for soil improvement. Robert Stewart. Mar., 1921.
233. Sweet clover for nitrate production. A. L. Whiting and T. E. Richmond. May, 1921.
234. A graphical presentation of the financial phases of feeding experiments. H. H. Mitchell. Oct., 1921.
235. Feeding pure-bred draft fillies. J. L. Edmonds and W. G. Kammlade. Nov., 1921.
236. Germ content of milk: III, As influenced by visible dirt. H. A. Harding and M. J. Prucha. Dec., 1921. Also abstract edition.
237. Effect of temperature of pasteurization on the creaming ability of milk. H. A. Harding. Dec., 1921.
238. Feeding farm work horses and mules. J. L. Edmonds and W. G. Kammlade. Jan., 1922.
239. How Greece can produce more food. C. G. Hopkins. July, 1922. Greek translation, by G. J. Bouyoucos, issued by American Red Cross commission to Greece.
240. The production and utilization of manure on Illinois dairy farms. H. A. Ross. July, 1922.

SOIL REPORTS.

19. Peoria County soils. J. G. Mosier, S. V. Holt, Ernest Van Alstine, and F. W. Garrett. Oct., 1921.
20. Bureau County soils. J. G. Mosier, S. V. Holt, Ernest Van Alstine, and F. W. Garrett. Dec., 1921.
21. McHenry County soils. J. G. Mosier, R. W. Dickenson, H. W. Stewart, Ernest Van Alstine, and H. J. Snider. Dec., 1921.
22. Iroquois County soils. J. G. Mosier, S. V. Holt, Ernest Van Alstine, and H. J. Snider. Jan., 1922.
23. De Kalb County soils. J. G. Mosier, H. W. Stewart, E. E. De Turk, and H. J. Snider. June, 1922.
24. Adams County soils. J. G. Mosier, F. W. Wascher, W. R. Leighty, and H. J. Snider. Aug., 1922.

Indiana Agricultural Experiment Station, Lafayette.

BULLETINS.

251. Tomato bacterial spot and seed disinfection. M. W. Gardner and J B. Kendrick. Feb., 1921.
252. Commercial feeding stuffs. E. G. Proulx [and others]. May, 1921.
253. Commercial fertilizers. E. G. Proulx [and others]. May, 1921.
254. A method for determining adulterants in butterfat. George Spitzer and W. F. Epple. July, 1921.
255. Cattle feeding: XVII, Winter steer feeding, 1920–1921. J. H. Skinner and F. G. King. 1921. Also popular edition.
256. Sheep feeding: X, Fattening western lambs, 1919–1920, 1920–1921. J. H. Skinner and C. M. Vestal. Sept., 1921. Also popular edition.
257. Swine dysentery. R. A. Whiting, L. P. Doyle and R. S. Spray. Oct., 1921.
258. Feeding experiments with laying pullets. A. G. Philips. Nov., 1921.
259. Canning factory tomatoes. H. D. Brown. Jan., 1922.
260. Commercial feeding stuffs. E. G. Proulx [and others]. Apr., 1922.
261. Tomato mosaic. M. W. Gardner and J. B. Kendrick. May, 1922.
262. Commercial fertilizers. E. G. Proulx [and others]. May, 1922.
263. Sheep feeding: Fattening western lambs, XI, 1921–1922. J. H. Skinner and F. G. King. June, 1922.
264. Inspection of agricultural seeds. E. G. Proulx [and others]. Jan., 1923.
265. Cattle feeding: Winter steer feeding, 1921–1922. J. H. Skinner and F. G. King. Dec., 1922.
266. Greenhouse soil sterilization: Part I, Sterilization methods and pest control. H. D. Brown.—Part II, Bacteriological and chemical examination. I. L. Baldwin.—Part III, Excess soluble salts in greenhouse soils. S. D. Conner. Dec., 1922.

Iowa Agricultural Experiment Station, Ames.

BULLETINS.

194. Sunshine and sanitation for hog houses. W. A. Foster and J. M. Evvard. Jan., 1921.
195. Preparation of corn for dairy cows. A. C. McCandlish and G. E. Weaver. Jan., 1921.
196. Controlling downy mildew of lettuce. A. T. Erwin. Jan., 1921.
197. The cost of producing milk. H. B. Munger. Jan., 1921.
198. Iowa farm management surveys, Blackhawk, Grundy, and Tama Counties. H. B. Munger. Mar., 1921.
199. Grape production and distribution in western Iowa. T. J. Maney. July, 1921.
200. Cooperative livestock shipping in Iowa in 1920. E. G. Nourse and C. W. Hammans. July, 1921.
201. A comparison of silage and soiling crops for summer milk production. A. C. McCandlish. July, 1921.
202. Breeding Rhode Island reds for type and egg production. H. A. Bittenbender. Jan., 1922.
203. Seed analyses, 1913 to 1921. L. H. Pammel and C. M. King. Dec., 1921.
204. Soybeans as a home-grown supplement for dairy cows. A. C. McCandlish, G. E. Weaver and L. A. Lunde. Feb., 1922.
205. The onion thrips [*Thrips tabaci* Lindeman] in Iowa. J. L. Horsfall and F. A. Fenton. Mar., 1922.
206. Potato growing in Iowa as affected by temperature. A. T. Erwin and R. A. Rudnick. Mar., 1922.
207. Influence of acidity on flavor and keeping quality of butter. Martin Mortensen. Aug., 1922.
208. Self-feeders for swine. J. M. Evvard, J. B. Davidson, and W. A. Foster. Nov., 1922. Also abridged edition.
209. Accounting records for livestock shipping associations. Frank Robotka. Nov., 1922. Also published as U. S. Dept. Agr. Bul. 1150.

RESEARCH BULLETINS.

66. The relation between the volatile and total acidity in starters and in cultures of *S. lacticus*. W. A. Cordes and B. W. Hammer. July, 1921.
67. Sources of the flavor in butter. B. W. Hammer. July, 1921.
68. Burnt or caramel flavor of dairy products. B. W. Hammer and W. A. Cordes. July, 1921.
69. A study of the control of crown gall on apple grafts in the nursery. I. E. Melhus and T. J. Maney. July, 1921.
70. The acid-base balance in animal nutrition: I, The effect of certain organic and mineral acids on growth, well-being and reproduction of swine; II, metabolism studies on the effect of certain organic and mineral acids on swine. A. R. Lamb and J. M. Evvard. July, 1921.
71. The acid-base balance in animal nutrition: III, Effect of addition of alkalies to the ration on growth and well-being of swine. A. R. Lamb and J. M. Evvard. July, 1921.
72. Alternate hosts and biologic specialization of crown rust in America. I. E. Melhus, S. M. Dietz and Florence Willey. Jan., 1922.
73. Influence of age at the time of freshening on production of dairy cows. A. C. McCandlish. Aug., 1922.

SOIL SURVEY REPORTS.

18. Wapello County. W. H. Stevenson, P. E. Brown, L. W. Forman and E. I. Angell. Jan., 1921.
19. Wayne County. W. H. Stevenson, P. E. Brown, L. W. Forman, D. S. Gray and P. C. Weichman [i. e. Wiechmann ?]. Apr., 1921.
20. Hamilton County soils. W. H. Stevenson, P. E. Brown, L. W. Forman and Knute Espe. July, 1921.
21. Louisa County soils. W. H. Stevenson, P. E. Brown, L. W. Forman and J. A. Elwell. Aug., 1921.
22. Palo Alto County. W. H. Stevenson, P. E. Brown, A. M. O'Neal, jr., L. W. Forman and W. G. Baker. June, 1922.
23. Winnebago County soils. W. H. Stevenson, P. E. Brown, L. W. Forman, W. G. Baker and G. H. Artis. June, 1922.

24. Polk County soils. W. H. Stevenson, P. E. Brown, L. W. Forman, G. E. Corson and C. J. Meister. June, 1922.
25. Marshall County soils. W. H. Stevenson, P. E. Brown, L. W. Forman, E. I. Angell, and H. J. Harper. July, 1922.
26. Madison County soils. W. H. Stevenson, P. E. Brown, T. H. Benton and L. W. Forman. June, 1922.
27. Adair County soils. W. H. Stevenson, P. E. Brown, L. W. Forman, T. H. Benton and P. C. Wiechmann. July, 1922.
28. Cedar County. W. H Stevenson, P. E. Brown, A. M. O'Neal, jr., L. W. Forman and D. S. Gray. June, 1922.

Kansas Agricultural Experiment Station, Manhattan.

BULLETINS.

225. Forage crops in western Kansas. R. E. Getty. Feb., 1921.
226. Fertilizers for alfalfa in eastern Kansas. L. E. Call, R. I. Throckmorton, C. C. Cunningham and B. S. Wilson. Sept., 1921.
227. Varieties of corn in Kansas. C. C. Cunningham and B. S. Wilson. Dec., 1921.
228. Relation of crop yields to quantity of irrigation water in southwestern Kansas. G. S. Knapp. June, 1922.
229. Farm storage as a factor in the marketing of Kansas wheat. R. M. Green. Nov., 1922.

TECHNICAL BULLETIN.

9. Adsorption at liquid-vapor and liquid-liquid interfaces and some related phenomena. H. H. King. Mar., 1922.

Kentucky Agricultural Experiment Station, Lexington.

BULLETINS.

231. (Research bulletin.) The relation of the Kentucky species of Solidago to the period of activity of adult *Cyllene robiniae*. Harrison Garman. Mar., 1921.
232. Soybeans. E. J. Kinney and George Roberts. May, 1921.
233. A comparison of corn silage and sorghum silage for fattening steers. E. S. Good, L. J. Horlacher and J. C. Grimes. July, 1921.
234. (Research bulletin.) Studies of dairy cattle: 1, Inheritance of color markings in Jersey cattle. J. J. Hooper.—2, Influence of oestrum on production of milk and butter fat. J. J. Hooper and P. E. Bacon.—3, Influence of age and pregnancy on production of milk and butter fat; 4, the escutcheon in relation to production of milk and butter fat; 5, the body secretions in relation to production of milk and butter fat. J. J. Hooper. July, 1921.
235. Commercial feeding stuffs. J. D. Turner, H. D. Spears and E. L. Jackson. Sept., 1921.
236. (Research bulletin.) A comparison of the calcium content of some virgin and cultivated soils of Kentucky by an improved method for the estimation of this element. O. M. Shedd. Oct., 1921.
237. (Research bulletin.) The removal of mineral plant-food by natural drainage waters. J. S. McHargue and A. M. Peter. Nov., 1921.
238. Analyses of commercial fertilizers. H. E. Curtis, H. R. Allen, and R. H. Ridgell. Dec., 1921.
239. (Research bulletin.) Vitality of spermatozoa: I, The vitality of the spermatozoa of some domestic animals; II, the vitality of the spermatozoa of some sea animals. W. S. Anderson. Jan., 1922.
240. (Research bulletin.) Land prices and land speculation in the bluegrass region of Kentucky. G. W. Forster. Jan., 1922.
241. (Research bulletin.) The white flies of hothouses: *Asterochiton abutilonea*. Harrison Garman.—*Asterochiton vaporariorum*. H. H. Jewett. Apr., 1922.
242. Feeding steers having access to barn and range vs. steers confined to barn. E. S. Good. June, 1922.
243. Breeding experiments with Kentucky mountain ewes. L. J. Horlacher and E. S. Good. July, 1922.
244. (Research bulletin.) Sterility in relation to animal breeding. W. S. Anderson. Dec., 1922.
245. Analyses of commercial fertilizers. H. E. Curtis, H. R. Allen, and Lelah Gault. Dec. 31, 1922.

Louisiana Agricultural Experiment Station, Baton Rouge.

BULLETINS.

178. Eggplant blight. C. W. Edgerton and C. C. Moreland. Jan., 1921.
179. Feeding ground rough rice, etc., to horses, mules, hogs, and dairy cattle, a preliminary report. W. H. Dalrymple. Mar., 1921.
180. Feeding blackstrap molasses to young calves. R. C. Calloway. July, 1921.
181. The mosaic disease of the Irish potato and the use of certified potato seed. C. W. Edgerton and G. L. Tiebout. Aug., 1921.
182. Onion diseases and onion seed production. C. W. Edgerton. Sept., 1921.
183. (Technical.) Preliminary notes on parasites found in ruminants at Municipal Abattoir, Baton Rouge, Louisiana. Gerard Dikmans. Oct., 1921.
184. Tests of the wilt resistance of different tomato varieties. C. W. Edgerton and C. C. Moreland. Nov., 1921.

Maine Agricultural Experiment Station, Orono.

BULLETINS.

296. Orthoptera of Maine: Grasshoppers and related insects. A. P. Morse. Mar., 1921.
297. Potato leafroll. Donald Folsom. Apr., 1921.
298. Studies in orchard management: II, Factors influencing fruit development of the apple. Karl Sax. Apr., 1921.
299. Report of progress on animal husbandry investigations in 1920. J. W. Gowen. May, 1921.
300. Studies in milk secretion: IX, On the performance of the progeny of Holstein-Friesian sires. J. W. Gowen and M. R. Covell. July, 1921.
301. Studies in milk secretion: XII, Transmitting qualities of Holstein-Friesian sires for milk yield, butter-fat percentage and butter-fat. J. W. Gowen and M. R. Covell. Oct., 1921.
302. A meadow caterpillar (*Ctenucha virginica*). E. M. Patch. Dec., 1921.
303. Rose bushes in relation to potato culture. E. M. Patch. Dec., 1921.
304. Abstracts of papers not included in bulletins; finances; meteorology; index. Dec., 1921.
305. The relation of tree type to productivity in the apple. Karl Sax and J. W. Gowen. Mar., 1922.
306. Studies in milk secretion: XVII [i. e. XIII], Relation between milk yields and butter-fat percentages of the 7-day and 365-day tests of Holstein-Friesian advanced registry cattle. M. S. Gowen and J. W. Gowen. June, 1922.
307. Sterility relationships in Maine apple varieties. Karl Sax. Sept., 1922.
308. The blueberry maggot in Washington County. E. M. Patch and W. C. Woods. Nov., 1922. In part compiled from 244.
309. Abstracts of papers not included in bulletins; finances; meteorology; index. Dec., 1922.

Maryland Agricultural Experiment Station, College Park.

BULLETINS.

242. The comparative value of different forms of lime. A. G. McCall. Jan., 1921.
243. Work of the Seed inspection laboratory for the year 1920. F. S. Holmes. Apr., 1921.
244. Poultry experiments, observations, notes and plans. R. H. Waite. Aug., 1921.
245. The seasonal march of the climatic conditions of a greenhouse, as related to plant growth. E. S. Johnston. Sept., 1921.
246. Garlic and other factors influencing grades of wheat. J. E. Metzger. Mar., 1922.
247. Fertilizers for Maryland soils. A. G. McCall. Feb., 1922.
248. Tomatoes for market and canning. Factors influencing the profitable production of tomatoes for the early market and canning factory, with some cost of production studies. H. A. Jones. Feb., 1922.
249. Work of the Seed inspection laboratory for the year 1921. F. S. Holmes. June, 1922.
250. Influence of grape training on fruit production. E. C. Auchter and W. R. Ballard. June, 1922.

Massachusetts Agricultural Experiment Station, Amherst.

BULLETINS.

201. Insecticides and fungicides for farm and orchard crops in Massachusetts. E. B. Holland, A. I. Bourne and P. J. Anderson. Mar., 1921. Also popular edition.
202. Rust of Antirrhinum. W. L. Doran. Aug., 1921.

203. Tobacco wildfire, preliminary report of investigations. G. H. Chapman and P. J. Anderson. Sept., 1921.
204. Thirty years' experience with sulfate of ammonia. F. W. Morse. Sept., 1921.
205. The nutritive value of cattle feeds: 3, Dried apple pomace for farm stock. J. B. Lindsey, C. L. Beals and J. G. Archibald. Nov., 1921.
206. Eighth report of the cranberry station: 1919 and 1920. H. J. Franklin. Dec., 1921.
207. Injury to foliage by arsenical sprays: I, The lead arsenates. H. T. Fernald and A. I. Bourne. Apr., 1922.
208. Leaf characters of apple varieties. J. K. Shaw. Apr., 1922.
209. Experiments in soil management and fertilization of orchards. J. K. Shaw. July, 1922.
210. Injury to foliage by arsenical sprays: II, Calcium arsenates and arsenites; III, notes on other arsenicals. H. T. Fernald and A. I. Bourne. Aug., 1922.
211. Changes in egg production in the station flock. H. D. Goodale and Ruby Sanborn. Oct., 1922. Also popular edition.
212. A thirty-year fertilizer test. S. B. Haskell. Nov., 1922.

TECHNICAL BULLETINS.

4. Development and pathogenesis of the onion smut fungus. P. J. Anderson. Nov., 1921.
5. Concerning the diagnosis of *Bacterium pullorum* infection in the domestic fowl. G. E. Gage. Aug., 1922.

Michigan Agricultural Experiment Station, East Lansing.

BULLETINS.

291. Fertilizer analyses. A. J. Patten [and others]. June, 1921.
292. Commercial feeding stuffs. A. J. Patten [and others]. June, 1921.

QUARTERLY BULLETINS.

Quarterly bulletins, Vol. 3, No. 3–Vol. 5, No. 2. Feb., 1921–Nov., 1922. Each number contains a variety of articles relating to agricultural practice, based upon investigational work of the station.

SPECIAL BULLETINS.

105. Rosen rye. F. A. Spragg. June, 1921.
106. Sugar beet growing in Michigan. J. F. Cox and E. B. Hill. Feb., 1921.
107. Diseases of bees in Michigan. R. H. Kelty. July, 1921.
108. The robust bean. F. A. Spragg and E. E. Down. Mar., 1921.
109. Dependable Michigan crop varieties. J. F. Cox. July, 1921.
110. Special report of the Upper Peninsula experiment station. D. L. McMillan and G. W. Putnam. Apr., 1921.
111. Studies in city milk distribution. S. J. Brownell. Nov., 1921.
112. An experiment in improving the milk supply of a city milk plant. L. H. Cooledge and O. T. Goodwin. Nov., 1921.
113. Sweet clover. C. R. Megee. Jan., 1922.
114. Spray and practice outline. C. P. Halligan, R. H. Pettit and G. H. Coons. Mar., 1922.
115. Dusting and spraying experiments of 1920 and 1921. W. C. Dutton and Stanley Johnston. Mar., 1922.
116. The agriculture of the Upper Peninsula. J. W. Weston, D. L. McMillan, and G. W. Putnam. Apr., 1922.
117. Potato culture in Michigan. H. C. Moore. Oct., 1922.
118. Pruning fruit trees. R. E. Marshall. Oct., 1922.

TECHNICAL BULLETINS.

50. Rate and extent of solubility of minerals and rocks under different treatments and conditions. G. J. Bouyoucos. July, 1921.
51. Studies on the reactions between soils and various chemical compounds. C. H. Spurway. Jan., 1921.
52. The colorimetric hydrogen ion determination as a means of studying biological changes in dairy products. L. H. Cooledge. Nov., 1921.
53. Studies on Michigan celery diseases: I, A Phoma root rot of celery. C. W. Bennett. Nov., 1921.

54. Studies in the diseases of the reproductive organs of cattle. E. T. Hallman. Nov., 1921.
55. The comparative pathogenicity of several strains of *Bacterium abortus* (Bang). I. F. Huddleson. Mar., 1922.
56. Leafhopper injury to potatoes. J. E. Kotila. July, 1922.
57. Studies on active bases and excess acids in mineral soils. C. H. Spurway. Oct., 1922.
58. The occurrence of protozoa in plants affected with mosaic and related diseases. Ray Nelson. Dec., 1922.

Minnesota Agricultural Experiment Station, University Farm, St. Paul.

BULLETINS.

195. Local cooperative potato marketing in Minnesota. J. D. Black, Frank Robotka and P. L. Miller. Sept., 1921.
196. Farm development studies in northern Minnesota. C. G. Worsham and Andrew Boss. Aug., 1921.
197. Relation of mosaic to running-out of potatoes in Minnesota. F. A. Krantz and G. R. Bisby. Sept., 1921.
198. Insects infesting stored food products. R. N. Chapman. Dec., 1921.
199. Fruit and vegetable diseases. E. C. Stakman, J. G. Leach and J. L. Seal. Jan., 1922.
200. Cattle feeding investigations: Part I, Fattening two-year old steers for market; Part II, fattening calves for baby beef. W. H. Peters and N. K. Carnes. Dec., 1922.
201. Organization and management of local livestock shipping associations in Minnesota. E. W. Gaumnitz and J. D. Black. Dec., 1922.

TECHNICAL BULLETINS.

1. Monographs of the North American species of Deraeocoris—Heteroptera, Miridae. H. H. Knight. June, 1921.
2. Spreading and adherence of arsenical sprays. William Moore. June, 1921.
3. Respiration of shelled corn. C. H. Bailey. Sept., 1921.
4. Wages of farm labor. C. L. Holmes. May, 1922.
5. Bacteriology and pathology of sterility in cattle. D. C. Beaver, W. L. Boyd, and C. P. Fitch. May, 1922.
6. Comparison of first generation tomato crosses and their parents. Richard Wellington. July, 1922.
7. Inheritance and yield with particular reference to rust resistance and panicle type in oats. R. J. Garber. July, 1922.
8. The determination of biologic forms of *Puccinia graminis* on *Triticum* spp. E. C. Stakman and M. N. Levine. July, 1922.
9. Sale prices as a basis for farm land appraisal. G. C. Haas. Nov., 1922.
10. Factors determining the price of potatoes in St. Paul and Minneapolis. Holbrook Working. Oct., 1922.
11. Studies on the parasitism of *Helminthosporium sativum*. J. J. Christensen. Nov., 1922.

Mississippi Agricultural Experiment Station, Agricultural College.

BULLETINS.

197. Corn experiments, College experiment station. H. B. Brown. Jan., 1921.
198. Corn variety tests, 1913 to 1920, Delta branch station. W. E. Ayres. Jan., 1921.
199. Sugar cane for syrup making. E. B. Ferris. Feb., 1921. Revision of 129.
200. Dairy calves, consumption of food and gain by different breeds; general notes, feed, and care. Earle Brintnall. July, 1921.
201. Report from South Mississippi branch experiment station for 1921. E. B. Ferris. Jan., 1922.
202. Report from Holly Springs branch experiment station for 1921. C. T. Ames. Dec., 1921.
203. Spraying experiments for the control of pecan scab in Mississippi. D. C. Neal. Dec., 1921.
204. 1920 and 1921 experiments with poultry. E. P. Clayton and J. P. Clayton. Dec., 1921.
205. Cotton experiments, 1921. H. B. Brown and J. F. O'Kelly. Dec., 1921.
206. The sweet potato for south Mississippi. E. B. Ferris and F. B. Richardson. Dec., 1921.

207. Nitrogenous fertilizer experiments, Delta branch station. C. [i. e.] G. B. Walker, E. C. Ewing, and I. P. Trotter. Apr., 1922.
208. Peanuts. E. B. Ferris. Mar., 1922. Revision of 130.
209. Alfalfa in the Delta, Delta branch station. G. B. Walker. Feb., 1922.
210. Vegetables and truck for home use, Delta branch station. W. E. Ayers. Mar., 1922.
211. Report from Holly Springs branch experiment station for 1922. C. T. Ames. Dec., 1922.

TECHNICAL BULLETINS.

10. Descriptions of eight new bark beetles (Ipidae) from Mississippi. M. W. Blackman. May, 1921.
11. Mississippi bark beetles. M. W. Blackman. July, 1922.

Missouri Agricultural Experiment Station, Columbia.

BULLETINS.

178. Testing fertilizers for Missouri farmers, 1920. F. B. Mumford, M. F. Miller and L. D. Haigh. Jan., 1921.
179. What the agricultural experiment station is doing for Missouri, for the year July 1, 1919, to June 30, 1920. F. B. Mumford. Jan., 1921.
180. Bat guano and its fertilizing value. W. A. Albrecht. Feb., 1921.
181. Corn in Missouri: I, Corn varieties and their improvement. L. J. Stadler and C. A. Helm. Mar., 1921.
182. Thirty years of field experiments with crop rotation, manure and fertilizers. M. F. Miller and R. R. Hudelson. Apr., 1921.
183. Crop rotations for Missouri soils. R. R. Hudelson and C. A. Helm. May, 1921.
184. Small fruit growing in Missouri. H. G. Swartwout. May, 1921.
185. Corn in Missouri: II, Field methods that increase the corn crop. C. A. Helm. June, 1921.
186. Actinomycosis (lump jaw, big jaw, and wooden tongue) in cattle. J. W. Connaway. June, 1921.
187. Infectious abortion in swine (progress report June 15, 1921). J. W. Connaway, A. J. Durant and H. G. Newman. June, 1921.
188. Productive methods for wheat in Missouri. C. A. Helm and L. J. Stadler. July, 1921.
189. One year's work, the Agricultural experiment station for the year July 1, 1920 to June 30, 1921. F. B. Mumford. Oct., 1921.
190. The costs of crop production in Missouri, 1921. B. H. Frame. Dec., 1921.
191. Seed studies with Irish potatoes. J. T. Rosa, jr. Feb., 1922.
192. Testing fertilizers for Missouri farmers, 1921. F. B. Mumford and L. D. Haigh. Feb., 1922.
193. The home vegetable garden as a business proposition. J. T. Rosa, jr. Mar., 1922.
194. Better methods of tomato production. J. T. Rosa, jr. Jan., 1922.
195. Productive methods for soybeans in Missouri. W. C. Etheridge and C. A. Helm. Mar., 1922.
196. Roup in fowls. A. J. Durant. Sept., 1922.
197. New knowledge, one year's work, agricultural experiment station, report of the director for the year July 1, 1921 to June 30, 1922. F. B. Mumford. Dec., 1922.

RESEARCH BULLETINS.

41. Growth of oak in the Ozarks. Frederick Dunlap. Mar., 1921.
42. The effect of a varying supply of nutrients upon the character and composition of the maize plant at different periods of growth. F. L. Duley and M. F. Miller. Apr., 1921.
43. Studies in animal nutrition: I, Changes in form and weight on different planes of nutrition. C. R. Moulton, P. F. Trowbridge and L. D. Haigh. July, 1921.
44. Precipitation and the growth of oaks at Columbia, Missouri. W. J. Robbins. Aug., 1921.
45. The effect on growth of breeding immature animals. F. B. Mumford. Aug., 1921.
46. Characters connected with the yield of the corn plant. W. C. Etheridge. Aug., 1921.
47. Localization of the factors determining fruit bud formation. H. D. Hooker, jr. and F. C. Bradford. Sept., 1921.
48. Investigations on the hardening process in vegetable plants. J. T. Rosa, jr. Dec., 1921.

49. Experiments in field plot technic for the preliminary determination of comparative yields in the small grains. L. J. Stadler. Dec., 1921.
50. Certain responses of apple trees to nitrogen applications of different kinds and at different seasons. H. D. Hooker, jr. Jan., 1922.
51. The influence of the plane of nutrition on the maintenance requirement of cattle. A. G. Hogan, W. D. Salmon and H. D. Fox. Feb., 1922.
52. Scarred endosperm and size inheritance in kernels of maize. W. H. Eyster. July, 1922.
53. The relation of temperature to blossoming in the apple and the peach. F. C. Bradford. Aug., 1922.
54. Studies in animal nutrition: II, Changes in proportions of carcass and offal on different planes of nutrition. C. R. Moulton, P. F. Trowbridge and L. D. Haigh. Sept., 1922.
55. Studies in animal nutrition: III, Changes in chemical composition on different planes of nutrition. C. R. Moulton, P. F. Trowbridge and L. D. Haigh. Oct., 1922.
56. Observations on winter injury: I, Early and late winter injury. F. C. Bradford.—II, An aftermath of winter injury. H. A. Cardinell. Nov., 1922.

Montana Agricultural Experiment Station, Bozeman.

BULLETINS.

139. Eighteenth annual report of the state entomologist of Montana. R. A. Cooley. Jan., 1921.
140. Corn experiments in south central Montana, results from the experimental dry farm, Huntley, Montana. A. E. Seamans. Feb., 1921.
141. Factors influencing quality and composition of sunflower silage. M. J. Blish. Mar., 1921.
142. Fallow experiments in south central Montana, results from the experimental dry farm, Huntley, Montana. A. E. Seamans. Apr., 1921.
143. Grain mixtures and root crops under irrigation. P. V. Cardon. May, 1921.
144. Farm organization studies on irrigated farms in the Billings region of Montana. E. L. Currier and D. C. Wood. Oct., 1921.
145. The college dairy herd, development care and management. J. O. Tretsven. Nov., 1921.
146. The brown bark spot of fruit trees. D. B. Swingle and H. E. Morris. Dec., 1921.
147. Milling and baking studies with wheat, report of progress: The effect of frost damage; the effect of aging of wheat and flour on baking value; the relative value of certain varieties. W. O. Whitcomb, W. F. Day and M. J. Blish. Dec., 1921.
148. Improvements in the methods of preparing and using grasshopper baits: The use of amyl acetate as a substitute for citrus fruits in grasshopper baits; time of day to put out grasshopper baits. J. R. Parker. Feb., 1922.
149. Eighth report of the Montana grain inspection laboratory for the period July 1, 1920, to June 30, 1922. Clyde McKee, W. O. Whitcomb and R. E. Kellogg. Nov., 1922.
150. Grasshoppers, cutworms, and other insect pests of 1921–1922, being the nineteenth report of the state entomologist of Montana. R. A. Cooley. Dec., 1922.
151. The gas tractor in Montana. H. E. Selby. Dec., 1922.

Nebraska Agricultural Experiment Station, Lincoln.

BULLETINS.

177. The Nebraska tractor tests. O. W. Sjogren, E. E. Brackett, C. W. Smith and F. R. Nohavec. Jan., 1921.
178. (North Platte experimental substation Bul. 22.) Winter wheat seed-bed preparation. L. L. Zook. June, 1921.
179. (North Platte experimental substation Bul. 23.) Winter wheat in western Nebraska. L. L. Zook. Feb., 1922.
180. Reading matter in Nebraska farm homes. J. O. Rankin. June, 1922.
181. Growth studies of dairy heifers: Effect of light and heavy feeding of wide and narrow rations. [The data . . . collected by W. B. Nevens, E. G. Woodward and J. W. Hendrickson, under the supervision of J. H. Frandsen . . . prepared for publication by H. P. Davis and Benjamin Masurovsky]. Aug., 1922.
182. Varieties of potatoes for Nebraska. H. O. Werner. Nov., 1922.

RESEARCH BULLETINS.

19. The regional adaption of corn in Nebraska. T. A. Kiesselbach and F. D. Keim. Apr. 1, 1921.
20. Corn investigations. T. A. Kiesselbach. June, 1922.
21. Studies of immunity against hemorrhagic septicemia. Leunis Van Es and H. M. Martin. Aug., 1922.
22. A study of the environmental conditions influencing the development of stem rust in the absence of an alternate host: I, The viability of the urediniospores of *Puccinia graminis tritici* form III. G. L. Peltier. Sept. 1, 1922.

Nevada Agricultural Experiment Station, Reno.

BULLETINS.

101. Death camas (*Zygadenus paniculatus* and *Zygadenus venenosus*) plants poisonous to sheep and cattle. C. E. Fleming, N. F. Peterson, M. R. Miller, and L. H. Wright. Feb., 1921.
102. Horse-flies and cattle. S. B. Doten. May, 1921.
103. One-night camps vs. established bed-grounds on Nevada sheep ranges. C. E. Fleming. Aug., 1922. Revision of 94, with additional data.
104. The spring rabbit-brush (*Tetradymia glabrata*), a range plant poisonous to sheep: Section I, Studies of the poisonous effects of spring rabbit-brush; section II, preliminary studies of the chemistry of the poisonous principle of the plant, with a detailed description of the symptoms and post-mortem conditions in poisoned sheep. C. E. Fleming, M. R. Miller, and L. R. Vawter. Sept. 1, 1922.

New Hampshire Agricultural Experimental Station, Durham.

BULLETINS.

198. Report of the New Hampshire agricultural experiment station for the biennium ending June 30, 1920. J. C. Kendall. May, 1921.
199. Digging up facts for New Hampshire farms. A brief survey of some of the research work conducted at the New Hampshire agricultural experiment station. J. C. Kendall. June, 1921.
200. Inspection of commercial feeding-stuffs, made for the state department of agriculture. H. R. Kraybill, T. O. Smith, and C. P. Spaeth. Aug., 1921.
201. Inspection of commercial fertilizers for 1921, made for the state department of agriculture. H. R. Kraybill, T. O. Smith, and C. P. Spaeth. Nov., 1921.
202. Results of seed tests for 1921, made for the state department of agriculture. M. G. Eastman. Dec., 1921.
203. Report of the director of the New Hampshire agricultural experiment station for the year ending June 30, 1921. J. C. Kendall. Jan., 1922.
204. Studies in termite control. W. C. O'Kane and W. A. Osgood. Apr., 1922.
205. Inspection of commercial feeding-stuffs, made for the State department of agriculture. H. R. Kraybill, T. O. Smith, and C. P. Spaeth. Aug., 1922.
206. Inspection of commercial fertilizers for 1922, made for the State department of agriculture. H. R. Kraybill, T. O. Smith, and C. P. Spaeth. Oct., 1922.
207. Results of seed tests for 1922, made for the State department of agriculture. M. G. Eastman. Dec., 1922.

TECHNICAL BULLETINS.

17. Experiments with contact sprays for leaf miners. W. C. O'Kane and C. A. Weigel. Feb., 1921.
18. The effects of shading some horticultural plants, a preliminary report. J. H. Gourley and G. T. Nightingale. June, 1921.
19. Laboratory studies of the toxicity of some sulphur fungicides. W. L. Doran. Mar., 1922.
20. Diffusion of carbon bisulphide in soil. W. C. O'Kane. June, 1922.
21. Bordeaux mixture: II, Stimulatory action. O. R. Butler. June, 1922.

New Jersey Agricultural Experiment Station, New Brunswick.

BULLETINS.

346. The chemical composition of the soils of the Camden area in New Jersey. A. W. Blair and H. C. McLean. Jan., 1921.
347. The artificial incubation and brooding of turkeys. H. W. Graybill. Jan., 1921.
348. The mosquitoes of New Jersey and their control. T. J. Headlee. Jan., 1921. Revision of 276.

349. Analyses of commercial fertilizers and ground bone; analyses of agricultural lime. C. S. Cathcart. Dec. 29, 1920.
350. Fertilizer registrations for 1921. C. S. Cathcart. Jan. 18, 1921.
351. Aids to successful oyster culture: I, Procuring the seed. T. C. Nelson. Feb., 1921.
352. A study of the biology of the sprinkling sewage filter. J. W. Thomson. Apr. 1, 1921.
353. (Farm management bulletin 5.) Costs, profits, and practices of the can-house tomato industry in New Jersey. Frank App and A. G. Waller. Apr. 20, 1921.
354. Analyses of commercial feeding stuffs and registrations for 1921. C. S. Cathcart. May 2, 1921.
355. A study of the distribution of hydrocyanic acid gas in greenhouse fumigation. W. H. W. Komp. Sept. 1, 1921.
356. Recent studies on peach yellows and little peach. M. A. Blake, M. T. Cook and C. H. Connors. Oct., 1921.
357. Analyses of materials sold as insecticides and fungicides during 1921. C. S. Cathcart and R. L. Willis. Oct. 17, 1921.
358. Analyses of commercial fertilizers, fertilizer supplies and home mixtures, 1921. C. S. Cathcart. Oct. 20, 1921.
359. The sclerotinia rot of celery. R. F. Poole. Jan., 1922.
360. Results of seed and legume inoculant inspection for 1921. J. G. Fiske. Jan., 1922.
361. Analyses of commercial fertilizers and ground bone; analyses of agricultural lime. C. S. Cathcart. Dec. 28, 1921.
362. The chemical composition of the soils of the Belvidere area in New Jersey. A. W. Blair and H. C. McLean. Apr., 1922.
363. A study of poultry diseases. W. C. Thompson and L. S. Dodson. Mar., 1922.
364. Fertilizer registrations for 1922. C. S. Cathcart. Jan. 18., 1922.
365. Recent investigations on the control of three important field diseases of sweet potatoes. R. F. Poole. Apr., 1922.
366. The chemical composition of the soils of the Millville area in New Jersey. A. W. Blair and H. C. McLean. Apr., 1922.
367. Chemotropism of mosquitoes. Willem Rudolfs. Mar., 1922.
368. Fertilizer inspections in New Jersey from 1880 to 1921. C. S. Cathcart. Apr., 1922.
369. Analyses of commercial feeding stuffs, and registration for 1922. C. S. Cathcart. Apr., 1922.
370. New Jersey poultry houses. W. C. Thompson, W. P. Thorp, jr., and G. H. Pound. Jan., 1923.
371. Analyses of commercial fertilizers, fertilizing supplies and home mixtures, 1922. C. S. Cathcart. Nov., 1922.
372. Analyses of materials sold as insecticides and fungicides during 1922. C. S. Cathcart and R. L. Willis. Oct., 1922.
373. The pepper maggot, a new pest of peppers and eggplants, *Spilographa electa*, Say, (Trypetidae). Alvah Peterson. Jan., 1923.
374. Biochemical oxidation of sulfur and its significance to agriculture. J. S. Joffe. Dec., 1922.
375. "Ammo-phos," its effects upon seed germination and plant growth. D. G. Coe. Jan., 1923.
376. Analyses of commercial fertilizers and ground bone; analyses of agricultural lime, 1922. C. S. Cathcart. Dec., 1922.

New Mexico Agricultural Experiment Station, State College.

BULLETINS.

124. Improved variety No. 9 of native chile. Fabian Garcia. Feb., 1921.
125. Chamiza as an emergency feed for range cattle. Luther Foster, J. L. Lantow, and C. P. Wilson. Mar., 1921.
126. The culture and feeding of Russian sunflowers. G. R. Quesenberry, O. C. Cunningham, and Luther Foster. May, 1921.
127. (Technical.) Six years of life history studies on the codling moth. A. B. Fite. June, 1921.
128. (Technical.) The utilization of feed by range steers of different ages: III, Alfalfa hay and cottonseed meal; IV, alfalfa hay, milo maize meal, and cottonseed meal. J. D. Hungerford and Luther Foster. Sept., 1921
129. Drainage in the Mesilla Valley of New Mexico. D. W. Bloodgood. Nov., 1921.
130. Dry farm crop production in eastern New Mexico. J. S. Cole. Jan., 1922.
131. The feeding of dry-farm crops to range steers in eastern New Mexico. J. L. Lantow and H. J. Clemmer. Mar., 1922.

132. Corn culture. G. R. Quesenberry. Apr., 1922.
133. The utility of yucca and chamiza as range supplements: I, Soapweed (*Yucca elata*); II, chamiza (*Atriplex canescens*). L. S. Brown. June, 1922.
134. Preliminary smudging experiments. Fabian Garcia and A. B. Fite. Dec., 1922.

New York Cornell Agricultural Experiment Station, Ithaca.

BULLETINS.

403. Raising colts. M. W. Harper. Jan., 1921.
404. Working plan for a communal forest for the town of Ithaca, New York. J. S. Everitt. July, 1921.
405. An economic study of farm tractors in New York. W. I. Myers. July, 1921.
406. Decomposition of green manures at different stages of growth. T. L. Martin. Aug., 1921.
407. The painted hickory borer (*Cyllene caryae* Gahan, order Coleoptera, family Cerambycidae). E. H. Dusham. Aug., 1921.
408. Production of new strains of corn for New York. C. H. Meyers, H. H. Love and F. P. Bussell. Mar., 1922.
409. An economic study of dairying on 149 farms in Broome County, New York. E. G. Misner. Apr., 1922.
410. Studies on insects affecting the fruit of the apple, with particular reference to the characteristics of the resulting scars. H. H. Knight. May, 1922.
411. The clover-leaf weevil (*Hypera punctata* Fab.). G. W. Herrick and C. H. Hadley, jr. July, 1922.
412. An economic study of the production of canning crops in New York. L. J. Norton. Dec., 1922.
413. The cabbage maggot (*Chortophila brassicae* Bouché, order Diptera, family Anthomyiidae), with special reference to its control. G. W. Herrick and Wallace Colman. Dec., 1922.

MEMOIRS.

39. The genetic relations of plant colors in maize. R. A. Emerson. Mar., 1921.
40. Liberation of organic matter by roots of growing plants. T. L. Lyon and J. K. Wilson. July, 1921.
41. Lysimeter experiments: II, Records for tanks 13 to 16 during the years 1913 to 1917, inclusive. T. L. Lyon and J. A. Bizzell. July, 1921.
42. Bean anthracnose. M. F. Barrus. July, 1921.
43. Variations in bacteria counts from milk as affected by media and incubation temperature. G. C. Supplee, W. A. Whiting, and P. A. Downs. July, 1921.
44. Attachment of the abdomen to the thorax in Diptera. B. P. Young. Aug., 1921.
45. The Botrytis blight of tulips. E. F. Hopkins. Aug., 1921.
46. A classification of the cultivated varieties of barley. R. G. Wiggans. Sept., 1921.
47. Typha insects, their ecological relationships. P. W. Claassen. Oct., 1921.
48. The inheritance of salmon silk color in maize. E. G. Anderson. Nov., 1921.
49. The biology of *Ephydra subopaea* Loew. Chih Ping. Nov., 1921.
50. The relative growth-promoting value of the protein of cocoanut oil meal, and of combinations of it with protein from various other feeding stuffs. L. A. Maynard and F. M. Fronda. Dec., 1921.
51. The hog louse, *Haematopinus suis* Linné, its biology, anatomy, and histology. Laura Florence. Dec., 1921.
52. Studies in pollen, with special reference to longevity. H. E. Knowlton. Jan., 1922.
53. The genetics of squareheadedness and of density in wheat, and the relation of these to other characters. Sarkis Boshnakian. May, 1922.
54. Horse raising in colonial New England. Deane Phillips. May, 1922.
55. Insects and other animal pests injurious to field beans in New York. I. M. Hawley. May, 1922.
56. The insect fauna of the genus Crataegus. W. H. Wellhouse. June, 1922.
57. A study, by the crop survey method, of factors influencing the yield of potatoes. E. V. Hardenburg. June, 1922.
58. The biology of the Chrysopidae. R. C. Smith. June, 1922.
59. Effect of climatic conditions on the blooming and ripening dates of fruit trees. H. A. Phillips. June, 1922.
60. The linkage of certain aleurone and endosperm factors in maize, and their relation to other linkage groups. C. B. Hutchison. June, 1922.
61. Some relations of organic matter in soils. F. A. Carlson. Sept., 1922.

New York State Agricultural Experiment Station, Geneva.

BULLETINS.

484. The control of the pear thrips. C. R. Phipps. Jan., 1921.
*485. Blister canker of apple and its control. W. O. Gloyer. Jan., 1921.
486. The relation of the number of bacteria in milk to the quality and yield of cheese. G. J. Hucker. Jan., 1921.
*487. Plant lice injurious to apple orchards: III, The delayed dormant spray for the control of rosy and green apple aphids. F. Z. Hartzell and L. F. Strickland. Apr., 1921.
*488. Milking machines: VI, Leakage from the vacuum pipe line into the pail as a source of contamination of milk. R. S. Breed and J. W. Bright. Aug., 1921.
489. Further studies on the effect of missing hills in potato fields and on the variation in the yield of potato plants from halves of the same seed tuber. F. C. Stewart. Oct., 1921.
*490. Control of apple red bugs by dusting. P. J. Parrott, Hugh Glasgow and G. F. McLeod. Nov., 1921.
*491. Potato seed experiments, whole small tubers vs. pieces of large tubers of the same plant. F. C. Stewart. Jan., 1922.
*492. Milking machines: VII, Further studies on methods of sterilization. A. H. Robertson, M. W. Finch and R. S. Breed. Mar., 1922.
493. Changes in the composition and cost of fertilizers in New York from 1914 to 1921. L. L. Van Slyke. Mar., 1922.
*494. Fermentation and preservation of manure: I, A study of certain bacteria involved in the ammonification of manure. H. J. Conn and R. C. Collison.—II, A study of certain preservatives and their effect on the fertilizing value of manure. R. C. Collison and H. J. Conn. May, 1922.
495. The pear in New York. H. B. Tukey. Dec., 1922.

TECHNICAL BULLETINS.

81. An investigation of the seed of the silver maple (*Acer saccharinum*): I, Analysis and composition of maple seed; II, occurrence of inosite hexaphosphoric acid in maple seed; III, acerin, the principal globulin in maple seed. R. J. Anderson and W. L. Kulp. Jan., 1921.
82. Types of flowers and intersexes in grapes with reference to fruit development. A. B. Stout. Jan., 1921.
83. The use of various culture media in characterizing actinomycetes. H. J. Conn. Apr., 1921.
84. The use of agar slants in detecting fermentation. H. J. Conn and G. J. Hucker.—Rose bengal as a general bacterial stain. H. J. Conn.—A modification and new application of the Gram stain. G. J. Hucker. July, 1921.
85. Composition of some soils from the Chautauqua County grape belt. R. C. Collison. Aug., 1921.
86. The relation between bacterial counts from milk as obtained by microscopic and plate methods. A. H. Robertson. Sept., 1921.
87. The microscopic study of bacteria in cheese. G. J. Hucker. Oct., 1921.
88. A study of the metabolism and respiratory exchange in poultry during vitamine starvation and polyneuritis. R. J. Anderson and W. L. Kulp. Feb., 1922.
89. Review of the bacteriological aspects of cheese ripening. G. J. Hucker. Apr., 1922.
90. The types of bacteria found in commercial cheddar cheese. G. J. Hucker. Apr., 1922.
91. Methods of determining the number of micro-organisms in tomato products. C. A. Darling. Nov., 1922.

HORTICULTURAL MONOGRAPH.

The pears of New York. U. P. Hedrick, G. H. Howe, O. M. Taylor, E. H. Francis and H. B. Tukey. 1921. Published as New York Agr. Expt. Sta. Rpt. 1921, pt. 2.

North Carolina Agricultural Experiment Station, Raleigh.

BULLETINS.

242. The green June beetle, or fig eater. J. J. Davis and Philip Luginbill. May, 1921. Also appendix, published separately.

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* Bulleins marked with an asterisk (*) were issued in popular form with the same or modified titles.

243. Wintering and summer fattening of steers in North Carolina. R. S. Curtis, F. T. Peden and F. W. Farley. Oct., 1921.
244. Methods and cost of raising pigs to the weaning age. D. T. Gray and E. H. Hostetler. July, 1922.
245. Rural organization, a study of primary groups in Wake County, N. C. C. C. Zimmerman and C. C. Taylor. Aug., 1922.
246. Wildfire of tobacco. F. A. Wolf. Nov., 1922.

TECHNICAL BULLETINS.

20. Studies on the physiology of some plant pathogenic bacteria: I, Solid culture media with a wide range of hydrogen and hydroxyl ion concentration. F. A. Wolf and I. V. Shunk.—II, Further studies on bacterial blight of soybean. I. V. Shunk and F. A. Wolf.—III, Tolerance to acids of certain bacterial plant pathogens. F. A. Wolf and I. V. Shunk.—IV, Thermal death points of some bacterial plant pathogenes in relation to reaction of the medium. F. A. Wolf and A. C. Foster.—V, The fermentative activity of some plant pathogenic bacteria in relation to hydrogen ion concentration. F. A. Wolf and A. C. Foster.—VI, The application of certain recent studies on technic to methods of culture of plant pathogenes. F. A. Wolf. Dec., 1921.
21. The gloomy scale. Z. P. Metcalf. June, 1922.

North Dakota Agricultural Experiment Station, Agricultural College.

BULLETINS.

144. Cost of producing wheat and other crops in North Dakota in 1920. R. E. Willard, Hutzel Metzer and Emma Skeem. Jan., 1921.
145. Edgeley substation, report 1914 to 1920. O. A. Thompson. Feb., 1921. Also contains report prepared for Bul. 133.
146. Report of the director, July 1, 1919 to June 30, 1920. P. F. Trowbridge. Mar., 1921.
147. Inheritance of rust resistance in a family derived from a cross between durum and common wheat. L. R. Waldron. Apr., 1921.
148. Fifteenth annual report of the State demonstration farms, 1920. E. I. Olsen. Apr., 1921.
149. Varietal trials with spring wheat in North Dakota. T. E. Stoa. Aug., 1921.
150. Report of the Hettinger substation for the years 1919 and 1920. U. J. Downey. July, 1921.
151. Winter wheat in North Dakota. L. R. Waldron. Sept., 1921.
152. (Research bulletin 1.) Some physical and chemical studies of certain clones and sibs of brome-grass. L. R. Waldron. Sept., 1921.
153. (Research bulletin 2.) Physical characters and some of their correlations in *Bromus inermis*. L. R. Waldron. Nov., 1921.
154. The trail of the short grass steer, the story of a Great Plains grazing trail. J. H. Shepperd. Nov., 1921.
155. Preliminary rat virus investigations. Feb., 1922.
156. The northern pig from birth to market. J. H. Shepperd. Apr., 1922.
157. Livestock judging contests. J. H Shepperd. Apr., 1922.
158. Williston substation, report for years 1914 to 1920. C. H. Ruzicka. May, 1922. Also includes data compiled for Bul. 132.
159. Experiment station progress, report of the director, 1920–1921. P. F. Trowbridge. Apr., 1922.
160. Report of the Dickinson substation, 1920–1921. Leroy Moomaw. May, 1922.
161. Report of Edgeley substation, year ending June 30, 1921. O. A. Thompson. May, 1922.
162. North Dakota weeds. O. A. Stevens. June, 1922.
163. The Demonstration farms, Sixteenth annual report, year ending June 30, 1921. Edgar Olson. May, 1921 [i. e. 1922].
164. Varietal trials with oats in North Dakota. T. E. Stoa. July, 1922.
165. Cost of production and farm organization on 126 farms in North Dakota, 1921, and other economic data. R. E. Willard, Hutzel Metzger, and T. S. Thorfinnson. Dec., 1922.

Ohio Agricultural Experiment Station, Wooster.

BULLETINS.

347. The utilization of calcium compounds in animal nutrition: 1–2, The metabolism of calcium compounds by growing swine, I–II. E. B. Forbes, J. O. Halverson, L. E. Morgan, J. A. Schulz, and E. B. Wells.—3–4, The effects of mineral supplements on the development of swine, I–II. E. B. Forbes, J. A. Schulz, C. H. Hunt, and A. R. Winter.—5, The palatability of mineral salt preparations to swine, cattle and horses. E. B. Forbes.—6, The alkali reserve of swine as affected by cereal feeding and mineral supplements. E. B. Forbes, J. O. Halverson, and J. A. Schulz. Mar., 1921.
348. Methods of renting land in Ohio. J. I. Falconer. May, 1921.
349. Supplements to corn for fattening swine. W. L. Robinson. May, 1921.
350. Wheat, flour and bread. M. K. Corbould. June, 1921.
351. Solvent action of nitrification and sulfofication. J. W. Ames. June, 1921.
352. Ohio weather for 1920. W. H. Alexander and C. A. Patton. June, 1921.
353. Fortieth annual report of the Ohio agricultural experiment station for the year ended June 30, 1921. C. G. Williams. June, 1921.
354. Heat for control of cereal insects. W. H. Goodwin. Jan., 1922.
355. Self-feeding swine. W. L. Robinson. Feb., 1922.
356. Some pests of Ohio sheep. D. C. Mote. Feb., 1922.
357. Dissemination of fire blight. H. A. Gossard and R. C. Walton. Mar., 1922.
358. Winter rations for breeding ewes. J. W. Hammond. May, 1922.
359. A bacterial rosette disease of lettuce. R. C. Thomas. June, 1922.
360. Ohio weather for 1921. W. H. Alexander and C. A. Patton. June, 1922.
361. County experiment farms in Ohio, Annual reports for 1920 and 1921. C. G. Williams. June, 1922. Also issued in nine separate parts.
362. Forty-first annual report of the Ohio agricultural experiment station for the year ended June 30, 1922. C. G. Williams. June, 1922.
363. The mineral metabolism of the milch cow. E. B. Forbes, C. H. Hunt, J. A. Schulz A. R. Winter, and R. F. Remler. Sept., 1922.

Oklahoma Agricultural Experiment Station, Stillwater.

BULLETINS.

135. A chemical study of broom corn and broom corn silage. C. T. Dowell and W. G. Friedemann. [1921.]
136. Sheep feeding investigations: Comparative rations for wintering breeding ewes. A. E. Darlow. [1921.]
137. Stomach worms in sheep. J. E. Guberlet. [1921.]
138. Alfalfa experiment. M. A. Beeson, Adrian Daane, and D. R. Johnson. Apr., 1921.
139. Cattle feeding investigations: Comparative value of silage for making beef. silages used; sunflower, corn, kafir, cane, and darso. W. L. Blizzard. July, 1921.
140. Wheat, continuous with and without manure. M. A. Beeson. Apr., 1921.
141. Cotton variety tests, with suggestions for growing cotton under boll weevil conditions. Glen Briggs. Jan., 1923.
142. Sheep feeding investigation: Wintering breeding ewes, ninety-day test, December 29 to March 30. A. E. Darlow. Mar., 1922.
143. The effect of lime and organic matter on the so-called hardpan subsoils. M. A. Beeson and H. F. Murphy. Mar., 1922.
144. Effect of protein and mineral on the development of swine. C. P. Thompson. May, 1922.
145. Oats, rotation vs. continuous culture. H. F. Murphy. Mar., 1922.

Oregon Agricultural Experiment Station, Corvallis.

BULLETINS.

176. The relation of carbohydrates and nitrogen to the behavior of apple spurs. E. M. Harvey and A. E. Murneck. Apr., 1921.
177. The management of sandy soils under irrigation. H. K. Dean. May, 1921.
178. Farm drainage. W. L. Powers and Ward Cretcher.—Discharge of Willamette Valley streams. F. F. Henshaw. June, 1921.
179. Poultry housing. James Dryden. May, 1921.
180. Egg-laying characteristics of the hen. James Dryden. Aug., 1921.
181. Hood River apple orchard management, with special reference to yields, grades, and value of fruit. G. G. Brown. Sept., 1921.

182. Growing steers. E. L. Potter and Robert Withycombe. Sept., 1921.
183. Shelter and warm water for fattening steers. E. L. Potter and Robert Withycombe. Sept., 1921.
184. Silage for fattening lambs. Robert Withycombe and E. L. Potter. Sept., 1921.
185. Preliminary report on the management of Willamette Valley soils. Nov., 1921.
186. A new test for maturity of the pear, pear harvesting, and storage investigations (Third report). A. E. Murneek. Nov., 1921.
187. The principal stock-poisoning plants of Oregon. W. E. Lawrence. Jan., 1922.
188. The wheat bunt problem in Oregon. D. E. Stephens and H. M. Woolman. Feb., 1922.
189. Irrigation of alfalfa. W. L. Powers and W. W. Johnston. Mar., 1922.
190. Wheat growing after fallow in eastern Oregon. D. E. Stephens and G. R. Hyslop. May, 1922.
191. Growing irrigated crops in Harney Valley. Obil Shattuck and D. W. Ritchie. July, 1922.
192. Infectious abortion of cattle. B. T. Simms and F. W. Miller. Nov., 1922.
193. Fattening steers (1922 edition). E. L. Potter and Robert Withycombe. Aug., 1922. Revision of 174.
194. Oats and vetch versus corn or sunflowers for silage. R. C. Jones. Dec., 1922.
195. Stump land reclamation in Oregon. H. D. Scudder. Dec., 1922.

Pennsylvania Agricultural Experiment Station, State College.

BULLETINS.

165. The lettuce "drop" due to *Sclerotinia minor*. W. S. Beach. Feb., 1921.
166. Soil fertility experiments on DeKalb, Volusia and Westmoreland soils. J. W. White and F. J. Holben. Mar., 1921.
167. Soy beans. C. F. Noll and R. D. Lewis. Apr., 1921.
168. Swine production. M. F. Grimes. May, 1921.
169. Lepidoptera injurious to the apples in Pennsylvania. S. W. Frost. Nov., 1921.
170. Two years of research (for the biennium ending June 30, 1921). Jan., 1922.
171. The bionomics and control of the onion maggot. J. R. Eyer. Feb., 1922.
172. Sunflower silage for milk production. S. I. Bechdel. Mar., 1922.
173. Methods of interpreting yield records in apple fertilization experiments. R. D. Anthony and J. H. Waring. May, 1922.
174. The crown rot of rhubarb caused by *Phytophthora cactorum*. W. S. Beach. July, 1922.
175. Forty years' results with fertilizers, general fertilizer experiments. F. D. Gardner, C. F. Noll, and R. D. Lewis. Aug., 1922.
176. Annual report of the director for the year ending June 30, 1922. R. L. Watts. Oct., 1922.
177. Tomato leaf spot and experiments with its control. J. H. Muncie. Dec., 1922.

Porto Rico Agricultural Experiment Station, Mayaguez.

BULLETINS.

27. Yam culture in Porto Rico. C. F. Kinman. May 24, 1921.
28. The coffee leaf spot (*Stilbella flavida*) in Porto Rico. T. B. McClelland. Dec. 14, 1921. Also Spanish edition.
29. Dairying in Porto Rico. By D. W. May. Dec., 1922. Also Spanish edition.

Rhode Island Agricultural Experiment Station, Kingston.

BULLETINS.

184. Experiences with alfalfa. S. C. Damon. Mar., 1921.
185. Fertilizer requirements of rotations including corn, potatoes, rye, and hay. B. L. Hartwell and S. C. Damon. Apr., 1921.
186. Liming with high-magnesium versus high-calcium limes. B. L. Hartwell. May, 1921.
187. A study of the influence of physical soil factors and of various fertilizer chemicals on the growth of the carnation plant: Part I, F. R. Pember and G. E. Adams.—Part II, F. R. Pember. Dec., 1921.
188. The substitution of stable manure by fertilizers, green manures, and peat. B. L. Hartwell and F. K. Crandall. Mar., 1922.
189. The reaction of soils in the field as influenced by the long-continued use of fertilizer chemicals. P. S. Burgess. Apr., 1922.
190. The feeding power of certain cereals, and their response to fertilizer ingredients. B. L. Hartwell and F. R. Pember. Nov., 1922.

South Carolina Agricultural Experiment Station, Columbia.

BULLETINS.

207. Variety tests with corn, 1917–1920. C. P. Blackwell, G. H. Collings, and W. B. Rogers. May, 1921.
208. Analyses of commercial fertilizers. R. N. Brackett and H. M. Stackhouse. Sept., 1921.
209. Fertilizer experiments. C. P. Blackwell and T. S. Buie. Dec., 1921.
210. Some phases of breeding work and seed production of Irish potatoes. W. J. Young. May, 1922.
211. Fertilizer experiments with cotton at Clemson College. C. P. Blackwell. June, 1922.
212. Analyses of commercial fertilizers. R. N. Brackett and H. M. Stackhouse. Aug., 1922.
213. Rations for weanling pigs. L. V. Starkey and W. D. Salmon Aug., 1922.
214. Comparison of shelled corn, rice meal, and velvet beans for fattening steers. L. V. Starkey and W. D. Salmon. Sept., 1922.
215. Lettuce varieties. A. M. Musser and W. J. Young. Oct., 1922.

South Dakota Agricultural Experiment Station, Brookings.

BULLETINS.

192. Rations for pigs. J. W. Wilson and A. H. Kuhlman. Jan., 1921.
193. Soybeans in South Dakota. A. T. Evans and Matthew Fowlds. Mar., 1921.
194. Acme wheat. Manley Champlin and Edgar McFadden. Oct., 1921.
195. Feeding dairy cattle. T. M. Olson. Oct., 1921.
196. Potatoes in South Dakota. A. T. Evans, George Janssen, and Matthew Fowlds. Feb., 1922.
197. Milk testing in practice. H. M. Jones and T. H. Wright. June, 1922.
198. Influence of purebred dairy sires. T. M. Olson and G. C. Biggar. June, 1922.
199. Sunflower silage for steers, smutted corn silage for cows. J. W. Wilson and A. H. Kuhlman. June, 1922.
200. Winter wheat in South Dakota. A. T. Evans and George Janssen. Dec., 1922.

Tennessee Agricultural Experiment Station, Knoxville.

BULLETINS.

123. Lespedeza (Japan clover). S. H. Essary. Apr., 1921.
124. Planting rates and spacing of corn, with tables for practical use. C. A. Mooers. May, 1921.
125. Stocker cattle problems on the Cumberland Plateau. C. A. Willson. June, 1921.
126. Varieties of corn and their adaptability to different soils. C. A. Mooers. Mar., 1922.

Texas Agricultural Experiment Station, College Station.

BULLETINS.

272. The chemical composition of Texas honey and pecans. G. S. Fraps. Jan., 1921.
273. Pink root disease of onions and its control in Texas. J. J. Taubenhaus and F. W. Mally. Jan., 1921.
274. Cotton variety experiments, Substation no. 3, Angleton, Texas. E. B. Reynolds. Feb., 1921.
275. Spur feterita. A. B. Conner and R. E. Dickson. Feb., 1921.
276. Corn variety experiments, Substation no. 3, Angleton, Texas. E. B. Reynolds. Feb., 1921.
277. Sweet potato fertilizer experiments at Substation no. 2, Troup. W. S. Hotchkiss Mar., 1921.
278. Farm tenantry in the United States, a study of the historical development of farm tenantry and its economic and social consequences on rural welfare, with special reference to conditions in the South and Southwest. W. B. Bizzell. Apr., 1921.
279. Type and variability in kafir. A. B. Conner and R. E. Karper. Apr., 1921.
280. Commercial fertilizers in 1920–1921. G. S. Fraps and S. E. Asbury. Aug., 1921.
281. Commercial feeding stuffs; September 1, 1920, to August 31, 1921. Bonney Youngblood. Oct., 1921.
282. The composition and feeding value of wheat by-products. G. S. Fraps. Nov., 1921.
283. Relation of soil nitrogen, nitrification, and ammonification to pot experiments. G. S. Fraps. Nov., 1921.

284. Availability of potash in some soil-forming minerals. G. S. Fraps. Dec., 1921.
285. Grain sorghums versus corn for fattening lambs. J. M. Jones and R. A. Brewer. Jan., 1922.
286. Rice bran for fattening hogs: Part I, Feeding value of rice bran when fed in various combinations with corn chops and tankage; Part II, the effect of rice bran, when fed in various combinations with corn chops and tankage, on the condition of the fat carcass. D. W. Williams and O. E. McConnell. Jan., 1922.
287. Availability of some nitrogenous and phosphatic materials. G. S. Fraps. Jan., 1922.
288. Cotton variety experiments, 1912–1920, Substation no. 7, Spur, Texas. G. F. Freeman and R. E. Dickson. Feb., 1922.
289. The effect of rock phosphate upon the corn possibility of the phosphoric acid of the soil. G. S. Fraps. Feb., 1922.
290. Digestibility of the sugars, starches, pentosans, and proteids of some feeding stuffs. G. S. Fraps. Feb., 1922.
291. Digestion experiments. G. S. Fraps. Feb., 1922.
292. The blueweed and its eradication. R. E. Karper. Feb., 1922.
293. Cultivation and care of trees on Texas farms. Helge Ness. Feb., 1922.
294. Shelling percentage in grain sorghum. A. B. Conner and R. E. Karper. Mar., 1922.
295. Correlation between external body characters and annual egg-production in white leghorn fowls. R. M. Sherwood. May, 1922.
296. Grain sorghums versus corn for fattening baby beeves. J. M. Jones, R. A. Brewer, and R. E. Dickson. May, 1922.
297. An economic study of a typical ranching area on the Edwards Plateau of Texas. Bonney Youngblood and A. B. Cox. July, 1922.
298. Commercial fertilizers in 1921–1922. G. S. Fraps and S. E. Asbury. Aug., 1922.
299. Varieties of cotton in northwest Texas. R. E. Karper. Aug., 1922.
300. Organic constituents of the soil. G. S. Fraps. Sept., 1922.
301. Soils of Bell, Jefferson, Smith, Taylor, and Webb Counties. G. S. Fraps. Sept., 1922.
302. The needs of the soils of Brazos and Jefferson Counties for sulphur. S. Lomanitz. Sept., 1922.
303. Commercial feeding stuffs, September 1, 1921, to August 31, 1922. Bonney Youngblood. Oct., 1922.
304. The fixation of phosphoric acid by the soil. G. S. Fraps. Dec., 1922.

Utah Agricultural Experiment Station, Logan.

BULLETINS.

178. The irrigation of barley. F. S. Harris and D. W. Pittman. Oct., 1922.
179. Apple candy, a commercial use for cull apples. T. H. Abell. Jan., 1921.
180. The irrigation of alfalfa. F. S. Harris and D. W. Pittman. Apr., 1921.
181. Duty-of-water investigations on Coal Creek, Utah. Arthur Fife. Aug., 1922.
182. The net duty of water in Sevier Valley. O. W. Israelson and L. M. Winsor. July, 1922.
183. Water-holding capacity of irrigated soils. O. W. Israelsen and F. L. West. Nov., 1922.

Vermont Agricultural Experiment Station, Burlington.

BULLETINS.

218. Blackberries of New England, genetic status of the plants. A. K. Peitersen. Mar., 1921.
219. Eccentric growth and the formation of redwood in the main stem of conifers. G. P. Burns. June, 1920.
220. (Inspection bulletin.) Commercial fertilizers, commercial feeding stuffs, agricultural seed. J. L. Hills, C. H. Jones, G. F. Anderson, and A. S. Lutman. Jan., 1921.
221. First 15 years of a 40-variety apple orchard; apple cion selection from high and low yielding parent trees. M. B. Cummings. Feb., 1921.
222. Yield and quality in Hubbard squash. M. B. Cummings and W. C. Stone. July, 1921.
223. Commercial fertilizers, commercial feeding stuffs, agricultural seed. J. L. Hills, C. H. Jones, G. F. Anderson, and A. S. Lutman. Sept., 1921.
224. Violets of North America. Ezra Brainerd. Dec., 1921. Introduction by G. P. Burns.

225. The protein requirements of dairy cows. J. L. Hills, C. L. Beach, A. A. Borland, R. M. Washburn, G. F. E. Story, and C. H. Jones. June, 1922. See also 229.
226. The maintenance requirements of dairy cattle. J. L. Hills. June, 1922. See also 229.
227. Marketing Vermont maple-sap products. A. W. McKay. July, 1922.
228. Commercial fertilizers, commercial feeding stuffs, agricultural seed. J. L. Hills, C. H. Jones, G. F. Anderson, and A. S. Lutman. Sept., 1922.
229. The protein and the maintenance requirements of dairy cattle. J. L. Hills. Oct., 1922. Popular edition of 225 and 226.

Virgin Islands Agricultural Experiment Station, St. Croix.

BULLETINS.

1. Sea Island cotton in St. Croix. Longfield Smith. May 23, 1921.
2. Sugar cane in St. Croix. Longfield Smith. Sept. 12, 1921.

Virginia Agricultural Experiment Station, Blacksburg.

BULLETINS.

224. Dusting experiments in peach and apple orchards in 1920. F. D. Fromme, G. S. Ralston, and J. F. Eheart. Mar., 1921.
225. Wintering dairy heifers. R. E. Hunt. June, 1921.
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